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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/724,972	11/28/2000	Stephen M. Trimberger	X-805-9 US	7821
24309	7590	06/17/2004	EXAMINER	
			NGUYEN, MINH DIEU T	
			ART UNIT	PAPER NUMBER
			2137	3
DATE MAILED: 06/17/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/724,972	TRIMBERGER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Minh Dieu Nguyen	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All
    - b) Some \*
    - c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date: _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

Claims 1-10 are pending.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kean, US 2001/0015919 in view of Crotty et al., US 6,664,807.

- a) **As to claims 1-3 and 7-10,** Kean discloses a method to prevent monitoring of the configuration data for the field programmable gate array comprising a decryptor (Figure 5, element 64) for decrypting an encrypted bitstream (page 1, paragraph 0009); and a decryption algorithm implemented by the decryptor (page 8, paragraphs 0104-0107). Kean discloses the decryption algorithm uses unique key in the ID register (Figure 5, element 62) for decrypting the encrypted bitstream, however he fails to teach the decryption algorithm uses address data into which configuration data will be loaded from the address indicator for decrypting the encrypted bitstream.

Crotty discloses an address indicator for indicating an address into which configuration data will be loaded (col. 1, lines 38-67 – col. 2, lines 1-2; col. 3, lines 55-67 – col. 4, lines 1-7), wherein the address indicator (col. 3, lines 55-67 to col. 4, lines 1-7) is an initial address indicator (claim 2) wherein the initial address indicator is a frame address for indicating a starting frame of the PLD into which configuration data will be loaded (claim 3, col. 1, lines 53-62), specifies a constant value (claim 7) and is loaded with a value in the bitstream (claim 8) wherein the value in the bitstream is not encrypted (claim 10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of address data into which configuration data will be loaded from the address indicator, as Crotty teaches, in the decryption algorithm of Kean so as to prevent PLD design relocation.

b) **As to claim 4**, Kean discloses the PLD wherein the decryption algorithm comprises the DES algorithm (page 2, paragraph 0020).

c) **As to claims 5 and 6**, Kean discloses the PLD wherein the DES algorithm includes a cipher block chaining algorithm (page 2, paragraph 0020) and a cipher feedback mode algorithm (page 8, paragraph 0115). Kean discloses the starter value is generated using a random number generator for the security circuit (page 2, paragraph 0014), however he fails to disclose the address indicator is placed into a starter value of the cipher block chaining algorithm.

Crotty discloses an address indicator for indicating an address into which configuration data will be loaded (col. 1, lines 38-67 – col. 2, lines 1-2; col. 3, lines 55-67 – col. 4, lines 1-7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of address data into which configuration data will be loaded from the address indicator, as Crotty teaches, in the DES algorithm including cipher block chaining algorithm and cipher feedback mode algorithm of Kean so as to make the reverse engineering much harder to do.

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

- a) US 6,654,889 to Trimberger discloses method and apparatus for protecting proprietary configuration data for programmable logic devices.
- b) US 6,118,869 to Kelem et al., discloses system and method for PLD bitstream encryption.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Dieu Nguyen whose telephone number is 703-305-9727. The examiner can normally be reached on M-F 6:00-2:30.

Art Unit: 2137

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Morse can be reached on 703-308-4789. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Minh Dieu Nguyen  
Examiner  
Art Unit 2137

mon✓  
mdn  
5/28/04

  
GREGORY MORSE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100